Climate Policy with the Chequebook – An Economic Analysis of Climate Investment Support

Karol Kempa[1,2] and Ulf Moslener[3]

EXECUTIVE SUMMARY

Is Climate Policy still on Track?

Across the globe, climate policy is increasingly using investment support instruments, such as grants, concessional loans, and guarantees – whereas carbon prices are losing importance. Governments and public finance institutions are spending more than one hundred billion USD for climate related financing support every year. New institutions emerge such as the Green Climate Fund, so called National Implementing Entities in developing countries or the UK Green Investment Bank. Existing as well as new institutions are continuously (re-)designing their investment support programmes.

We argue that governments tend to move away from their role as regulator determining the market rules and tackling externalities at their origin by, e.g., introducing prices through carbon taxes or permit trading schemes to internalise the emission externality. In contrast, governments increasingly target the symptoms of market failures by taking on the role of an actor on financial markets and providing financing or investment subsidies to specific projects. These financing instruments do not directly correct market failures, but rather decrease the financing costs of certain projects and thereby increase their attractiveness for investors. We raise the issue of whether the trend towards public finance instruments is compatible with facilitating the structural change at least cost to society, or whether it runs

1 Corresponding author: Frankfurt School of Finance and Management, FS-UNEP Collaborating Centre for Climate and Sustainable Energy Finance, Contact: k.kempa@fs.de
2 Justus Liebig University Giessen, Department of Economics and Business Studies
3 Frankfurt School of Finance and Management, FS-UNEP Collaborating Centre for Climate and Sustainable Energy Finance

the risk of being overly expensive or using scarce public funds inefficiently, and hence impeding the transition towards a low carbon economy.

Market Failures and Finance Instruments

First, we present the major investment support instruments, namely grants, interest-subsidised loans and loan guarantees and discuss their underlying design characteristics. We further identify the fundamental market imperfections related to clean energy investments – emission externalities, knowledge spillovers, and capital market imperfections – and examine their negative impacts on the risk-return characteristics of these investments that private actors' investment decisions are based on.

Subsequently, we analyse to what extent finance instruments are capable of correcting each of these market failures (in comparison to alternative policies) and the information requirements to design these instruments cost-efficiently. We argue that finance instruments are able to address the effects of all considered market failures. However, a carbon price is superior in internalising the emission externalities. With respect to innovation spillovers and capital market failures, investment support instruments – if designed appropriately – can effectively compensate the market failures.

Policy Considerations and Conclusions

Real-world climate related investments, as renewable energy and energy efficiency projects, are subject to more than one market imperfection and frequently a number of policy instruments and incentives coexist. Designing appropriate support policy schemes in such a context is challenging. Nevertheless, their design will benefit from a clear understanding of the individual market imperfections.

As market-based instruments are the first-best choice to internalise the emission externality, other policies, such as finance instruments, should only be considered if an emission price is (politically) not feasible. When using finance instruments to correct the

emission externality, government support should aim to achieve a certain benefit at least cost, which requires some estimate of the benefit of saved emissions.

In contrast to the emission externality, finance instruments are suitable to address market failures due to knowledge spillovers and, in particular, imperfections on capital markets. In the case of knowledge spillovers, a main guideline for using financial support is that grants should be used for early-stage, far-from-maturity clean-tech innovation investments, whereas the support of more mature technologies, in particular their deployment, can be more cost efficiently supported by subsidised loans or even guarantees. Within the group of finance instruments, loan guarantees and interest subsidies are the most appropriate policies to address capital market failures as they are generally more cost efficient compared to (investment) grants. However, direct government lending bears the risk of crowding out private lending.

The structural change towards a low-carbon economy requires increasing carbon scarcity. This strongly speaks in favour of (i) introducing carbon-price-based regulation to cope with the corresponding externality and (ii) focusing on understanding the non-emission market imperfections when designing investment support policies in order to avoid inefficient government spending.